

Complete Summary

GUIDELINE TITLE

Congestive heart failure. Nutrition management for older adults.

BIBLIOGRAPHIC SOURCE(S)

Tangalos EG. Congestive heart failure. Nutrition management for older adults. Washington (DC): Nutrition Screening Initiative (NSI); 2002. 12 p. [30 references]

COMPLETE SUMMARY CONTENT

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

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IMPLEMENTATION OF THE GUIDELINE

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT

CATEGORIES

IDENTIFYING INFORMATION AND AVAILABILITY

SCOPE

DISEASE/CONDITION(S)

Congestive heart failure (CHF)

Note: Left ventricular systolic dysfunction is the primary focus of this guideline. Other causes of congestive heart failure, such as right-sided failure, valvular diseases, metabolic disorders (e.g., hypothyroidism), and infectious myocarditis, are not included.

GUIDELINE CATEGORY

Counseling
Evaluation
Management
Prevention
Risk Assessment
Screening

CLINICAL SPECIALTY

Cardiology
Family Practice

Geriatrics
Internal Medicine
Nutrition

INTENDED USERS

Advanced Practice Nurses
Dietitians
Health Care Providers
Nurses
Occupational Therapists
Patients
Physical Therapists
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To provide nutrition screening and intervention strategies for congestive heart failure (CHF) that will enhance disease management and health care outcomes and that will positively impact individual health and quality of life of older adults

TARGET POPULATION

Older adults with the most common type of congestive heart failure (CHF), left ventricular systolic dysfunction, and older adults at risk for congestive failure

INTERVENTIONS AND PRACTICES CONSIDERED

Nutrition Screening for Risk Factors for Congestive Heart Failure (CHF)

1. Calculation of body mass index and measurement of body weight and height
2. Blood pressure measurement
3. Periodic assessment of serum albumin
4. Periodic assessment of anthropomorphic indicators or protein/energy status
5. Measurement of waist circumference and/or skin sagittal thickness of abdomen
6. Identification of diet-related diseases or conditions
7. Evaluation of intake of sodium, calories, fluid, alcoholic beverages, use of vitamins/supplements
8. Evaluation of smoking habits, current medications (including alternative therapies), and activity levels

Nutrition Interventions

1. Reduction of sodium intake
2. Elimination or limitation of alcohol intake
3. Weight maintenance and maintenance of adequate calorie/protein intake
4. Dietary advice, including use of whole grains, high fiber, and foods low in saturated animal fats (note: both Mediterranean-type diet and American Heart Association diets are considered)

5. Thiamin supplementation in patients on high-dose diuretics
6. Avoidance of excessive fluid intake
7. Encouragement of activity (e.g., walking program)
8. Smoking cessation
9. Encouragement of adherence to all prescribed diet/medication regimens

MAJOR OUTCOMES CONSIDERED

- Lifestyle factors associated with increased risk of congestive heart failure (CHF)
- Diet-related and other diseases/conditions associated with development of CHF
- Adverse health outcomes associated with CHF
- Incidence of weight loss and cachexia associated with CHF
- Impact of nutrition management on symptoms of CHF, hospital admissions and readmissions, and quality of life
- Health services utilization and costs associated with CHF

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Professionals with expertise in nutrition, medicine, and allied disciplines served as authors and reviewers.

The information in A Physician's Guide to Nutrition in Chronic Disease Management for Older Adults-Expanded Version is derived from The Role of Nutrition in Chronic Disease Care, a 1997 Nutrition Screening Initiative (NSI) publication. The authors updated their 1997 work through an extensive review of the literature, using evidence-based data where possible and consensus-based information when definitive outcomes were not available.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

Impact of Congestive Heart Failure on Health Services Utilization and Costs

Congestive heart failure (CHF) is the most common indication for admission to the hospital among older persons. An estimated \$18 billion is spent for the care of CHF patients. This includes costs related to hospital care, office visits, home care, long-term care, and medications. CHF is the single most costly health care problem in the United States and the second leading reason for hospitalization in patients over 65 years of age. Behavioral factors, such as poor compliance with nutritional and pharmacological treatment regimens, frequently contribute to exacerbations of CHF in the elderly. In part, noncompliance may be due to the difficult-to-follow medication schedules prescribed by health care providers. It is estimated that 20 to 58% of patients with CHF are noncompliant with medications. Noncompliance is a major cause of unnecessary hospitalization. Of patients hospitalized with heart failure, 27% were rehospitalized within 90 days due to dietary and/or medication noncompliance. Readmission rates for patients 65 years and older with CHF approach 50%. Factors that may contribute include social isolation, poor compliance with medications, and poor diet. Programs providing case management for CHF have been effective.

A multidisciplinary intervention, which included a prescribed diet and nutrition education by a hospital dietitian, reduced hospital readmission in elderly patients with congestive heart failure (CHF). The overall cost of care for patients was \$460.00 less per patient in the treatment group due to reduced readmission rates. Quality-of-life scores in the treatment group were also significantly higher ($p < 0.001$) at 90 days post intervention than in the control. Readmission rates were reduced by 42% and the mean number of days hospitalized decreased by approximately 2 days.

METHOD OF GUIDELINE VALIDATION

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

An interdisciplinary advisory committee of nationally recognized practitioners in medicine, nutrition, and geriatrics reviewed the chapter related to their area of expertise.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Nutrition Screening Guidelines for Congestive Heart Failure (CHF)

At a minimum, nutrition screening for risk factors for CHF should include the following:

- Calculation of body mass index (BMI) and measurement of body weight at each office visit (A weight gain of >3 to 5 pounds in one week may suggest a significant decline in cardiac function.)
- Measurement of height (annually in those age 65 years and older)
- Measurement of blood pressure at each office visit
- Periodic assessment of serum albumin level
- Periodic assessment of anthropometric indicators of protein/energy status
- Waist circumference and/or skinfold/sagittal thickness of abdomen for fluid and estimate of lean/fat content and ratio
- Identification of diet-related diseases or conditions that contribute to CHF
- Evaluation of caloric intake (if significant over- or underweight is present)
- Evaluation of sodium intake
- Evaluation of fluid intake
- Evaluation of alcoholic beverage intake
- Evaluation of activity level
- Evaluation of smoking habits
- Evaluation of current medications
- Evaluation of vitamin/mineral supplements and/or use of complementary/alternative therapies

Measurement of blood pressure combined with the use of the Nutrition Screening Initiative's "Level II Screen" (see appendices in the original guideline document) provides a mechanism to assess the majority of the elements identified above. The Level II Screen can be an invaluable starting point in the identification and treatment of nutritional risk factors associated with CHF.

Nutrition Intervention Guidelines for CHF

Nutrition intervention in CHF should consist of one or more of the following:

- Reduce sodium intake to <2,400 mg/day. If large doses of diuretic are required (>80 mg/day of furosemide), reduce sodium intake to <2 grams/day. All dietary guidelines should be provided in both oral and written form.

- Eliminate or limit alcohol intake to <1 drink per day (30 ml of liquor or its equivalent in wine or beer).
- Maintain an adequate calorie/protein intake to maintain weight so that the body mass index remains between 22 to 27 and serum albumin remains >3.5 g/dl.
- Emphasize whole grains, high fiber, fresh fruits and vegetables, foods low in saturated animal fats and trans fatty acids, and 2 or more fatty fish meals/week (i.e., salmon, mackerel, herring, tuna).
- Consider thiamin supplementation in patients on large doses of diuretics chronically (>80 mg furosemide for ≥ 3 months).
- Avoid excessive fluid intakes. Implement fluid restriction if hyponatremia is present.
- Encourage activity. When appropriate, a home walking/progressive activity program may help patients avoid the negative physiological and psychological consequences of inactivity.
- Promote smoking cessation.
- Encourage adherence to all diet/medication regimens that have been prescribed.

Evidence suggests that the Mediterranean-type diet may help protect the heart and may even reduce the risk for heart failure after a first heart attack. The diet features whole grains, fish, olive oil, and garlic, thus providing heart-healthy fiber and nutrients, including omega-3 fatty acids and antioxidants. Fresh fruits and vegetables are recommended, although carbohydrate intake is reduced. The Mediterranean-type diet consists of a relatively high fat intake (about 35 to 45% of daily calories), primarily monounsaturated and polyunsaturated fats. Protein intake recommendations are the same as those in the American Heart Association diet but the emphasis is on fish and higher amounts of nuts, legumes, and beans. While daily intake of wine is sometimes recommended with this diet, its use in CHF should be determined on a case-by-case basis since alcoholic intake with some CHF patients may be contraindicated.

The diagnosis of CHF often necessitates dramatic lifestyle changes on the part of the patients and their families. Thus, it is vital that patients understand their disease and be involved in developing the plan for their care. Education and counseling about lifestyle changes are required. Current therapy for CHF can help to maintain function, improve quality of life, and reduce the risk of re-hospitalization and/or mortality. The patients and their families must understand the prescribed therapeutic plan and be actively involved in its development and implementation.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

In general, nutrition screening and intervention for congestive heart failure (CHF) may result in:

- Stabilization/improvement in cardiac function
- Stabilization/improvement in body weight
- Prevention of/improvement in diet-related diseases or conditions associated with the development of congestive heart failure
- Prevention of/improvement in adverse health outcomes associated with congestive heart failure
- Prevention/minimization of drug/nutrient interactions

Benefits of Nutrition Management to Patients

- Current dietary and medication therapy for CHF can maintain function, improve quality of life, and prolong survival. Counseling and education can improve patient outcomes and decrease unnecessary hospitalizations.
- Appropriate nutritional intervention for patients with CHF can have immediate and sustained impact. Salt, water, and protein metabolism all have a role to play in reducing fluid load and stress on the heart. A good diet and medical therapy can maintain function, improve quality of life, and prolong survival.
- The provision of a supervised program of exercise for patients with CHF results in reduced breathlessness and fatigue and improvement in general well-being. An arm exercise training program twice weekly increased peak work capacity by 23% after 24 months and by 46% after 36 months. A 34% increase in exercise duration and improved quality of life was observed in patients with CHF who participated in forty 1-1/2 hour graded, supervised exercise sessions for a period of 3 months.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Health care professionals must decide how best to implement these recommendations in multiple settings and in patients with diverse needs. It is essential to develop a habitual approach to the nutrition screening and assessment of nutritional status in older adults, and develop policies, protocols, and procedures to ensure the implementation of disease-specific nutritional interventions. The reader should refer to other Nutrition Screening Initiative (NSI) materials for additional information and to facilitate a systematic approach to nutritional care. NSI screening tools are included as appendices of the original guideline document -- DETERMINE Your Nutritional Health Checklist and Levels I and II Screens. The Checklist was developed as a self-administered tool designed

to increase public awareness of the importance of nutritional status to health and to encourage older people to discuss their own nutritional status with their primary provider. Based on this guided discussion, the provider can decide if additional screening or assessment is indicated. The Level I Screen was designed for administration by non-physician health care providers in community settings while Level II requires administration by physicians and physician-extenders that have the ability to order and interpret laboratory parameters indicative of nutritional health.

Evaluation Criteria to Document Improved Health Outcomes

Assignment to a patient to a New York Heart Association (NYHA) Functional Class is an appropriate framework to use when deciding on pharmacologic treatment of the patient with heart failure. The classes are listed in the original guideline document.

The evaluation criteria which are used to document the impact of nutrition screening and intervention in congestive heart failure (CHF) are consistent with the goals of nutrition screening and intervention for CHF. Subjective or objective improvement or stabilization in one or more of following physiologic parameters may serve as indices of the effectiveness of nutritional intervention:

- Maintenance of a stable weight or improvement in weight if indicated. Sudden increases in body weight of as little as 3 to 5 pounds suggest marked fluid retention and are of sufficient magnitude to push many patients into heart failure.
- Serum albumin levels of ≥ 3.5 g/dl (pre/post acute episodes of CHF)
- Normalization of pulse rate or decreased tachycardia (normal: <90 beats/minute)
- Normalization of respiratory rate or decreased tachypnea (normal: 12 to 20 times/minute)
- Decreased dyspnea (shortness of breath)
- Decreased orthopnea (shortness of breath when in a supine position)
- Decreased paroxysmal nocturnal dyspnea (shortness of breath upon awakening)
- Decreased nocturia
- Decreased fatigue or increased exercise tolerance
- Decreased physical signs of pulmonary and/or systemic edema
- Improved appetite
- Prevention of/improvement in diet-related diseases or conditions associated with the development of CHF (e.g., hypertension, diabetes mellitus, coronary artery disease)
- Prevention of/improvement in adverse health outcomes associated with CHF

Evaluation Criteria to Document the Impact of Nutrition Management on the Health Care System

In addition to the evaluation criteria listed above, the following may be used to assess the impact of nutrition screening and intervention for CHF on the delivery of health care. Reductions or improvements in these indicators could be used to document a positive impact of nutrition screening and intervention in individuals to whom routine and appropriate nutritional care is made available:

- Incidence/exacerbation of CHF in the population served
- Type, quantity, or number of doses of a medication(s) used to treat CHF
- Number of visits to the primary health care provider needed to successfully manage CHF
- Rates of admission or length of stay in acute or long term care settings for the management of CHF or its consequences
- Incidence/improvement in the diet-related diseases or conditions that contribute to CHF

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Tangalos EG. Congestive heart failure. Nutrition management for older adults. Washington (DC): Nutrition Screening Initiative (NSI); 2002. 12 p. [30 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002

GUIDELINE DEVELOPER(S)

American Academy of Family Physicians - Medical Specialty Society
American Dietetic Association - Professional Association
Nutrition Screening Initiative - Professional Association

GUIDELINE DEVELOPER COMMENT

The Nutrition Screening Initiative (NSI) is a partnership of the American Academy of Family Physicians (AAFP) and the American Dietetic Association (ADA). It is funded in part through a grant from Ross Products Division, Abbott Laboratories.

Additional information can be obtained from the [AAFP Web site](#) and the [ADA Web site](#).

SOURCE(S) OF FUNDING

The Nutrition Screening Initiative (NSI) is funded in part through a grant from Ross Products Division, Abbott Laboratories.

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary author: Eric G. Tangalos, MD, Professor of Medicine and Chair, Division of Community Internal Medicine, Mayo Clinic, Rochester, MN

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Academy of Family Physicians \(AAFP\) Web site](#) and to members only from the [American Dietetic Association \(ADA\) Web site](#).

Print copies: Not available

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Nutrition Screening Initiative (NSI). A physician's guide to nutrition in chronic disease management for older adults. Washington (DC): Nutrition Screening Initiative (NSI); 2002. 18 p.

Electronic copies available in Portable Document Format (PDF) from the [American Academy of Family Physicians \(AAFP\) Web site](#) and the [American Dietetic Association \(ADA\) Web site](#).

Electronic copies also available for download in Personal Digital Assistant (PDA) format from the [American Academy of Family Physicians \(AAFP\) Web site](#).

Print copies: Available from Ross Educational Service Materials; Phone: (800) 986-8503; Web site: www.Ross.com/nsi.

PATIENT RESOURCES

The following is available:

- Managing chronic disease. Food tips if you need extra nutrients. In: Nutrition Screening Initiative (NSI). A physician's guide to nutrition in chronic disease management for older adults. Washington (DC): Nutrition Screening Initiative (NSI); 2002. 4 p.

Electronic copies available in Portable Document Format (PDF) from the [American Academy of Family Physicians \(AAFP\) Web site](#) and the [American Dietetic Association \(ADA\) Web site](#).

Electronic copies also available for download in Personal Digital Assistant (PDA) format from the [American Academy of Family Physicians \(AAFP\) Web site](#).

Print copies: Available from Ross Educational Service Materials; Phone: (800) 986-8503; Web site: www.Ross.com.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on April 16, 2004. The updated information was verified by the guideline developer on June 21, 2004.

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